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SEQUENCE LISTING

<110> Jackson, W.
Harris, A.

<120> NEISSERIA MENINGITIDIS POLYPEPTIDE, NUCLEIC ACID
SEQUENCE AND USES THEREOF

<130> 7969-083

<140> 09/388,089
<141> 1999-08-31

<160> 20

<170> PatentIn Ver. 2.0

<210> 1

<211> 1347

<212> DNA

<213> Neisseria meningitidis

<220>

<221> modified_base

<222> (499)

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agcaaagacg gctatattct gaccaatacg cacgtcgta ccggcatggg cagtatcaa 300
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acacccttca tccaaaccga cgttgcacatc aatccgggca actccggcgg cccgctgttc 600
aacttaaaag gacaggtcgt cggcatcaac tcgcaaatac acagccgcag cggcggattc 660
atggcattt ctttcgcat cccgatttgc gttgcccattga atgtcgccga acagctgaaa 720
aacaccggca aagtccaaacg cggacaactg ggcgtgatta ttcaagaagt atcctacggt 780
ttggcacaat cgttcggttt ggacaaagcc ggcggcgcac tgattgccaa aatcctgccc 840
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gaagtctatcgcc tcggcgtatg gcgcaaaaggc gaagaaatca caatcaaagt caagctggc 1020
aacgcggccg agcatatcg cgcacatcc aaaacagatg aagcccccta caccgaacag 1080
caatccggta cgttctcggt cgaatccgca ggcattaccc ttcaagacaca taccgacagc 1140
agcggcggac acctcgctgt cgtacgggtt tccgacgcgg cagaacgcgc aggcttgagg 1200
cgcggcgcacg aaattcttgc cgtcgggcaa gtccccgtca atgacgaagc cggttccgc 1260
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<210> 2

<211> 447

<212> PRT

<213> Neisseria spp.

<400> 2

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20 25 30

Ser Asn Ala Glu Thr Asp Ser Asp Pro Leu Ala Asp Ser Asp Pro Phe
35 40 45

Tyr Glu Phe Phe Lys Arg Leu Val Pro Asn Met Pro Glu Ile Pro Gln
50 55 60

Glu Glu Ala Asp Asp Gly Gly Leu Asn Phe Gly Ser Gly Phe Ile Ile
65 70 75 80

Ser Lys Asp Gly Tyr Ile Leu Thr Asn Thr His Val Val Thr Gly Met
85 90 95

Gly Ser Ile Lys Val Leu Leu Asn Asp Lys Arg Glu Tyr Thr Ala Lys
100 105 110

Leu Ile Gly Ser Asp Val Gln Ser Asp Val Ala Leu Leu Lys Ile Asp
115 120 125

Ala Thr Glu Glu Leu Pro Val Val Lys Ile Gly Asn Pro Lys Asp Leu
130 135 140

Lys Pro Gly Glu Trp Val Ala Ala Ile Gly Ala Pro Phe Gly Phe Asp
145 150 155 160

Asn Ser Val Thr Ala Gly Val Ser Ala Lys Gly Arg Ser Leu Pro Asn
165 170 175

Glu Ser Tyr Thr Pro Phe Ile Gln Thr Asp Val Ala Ile Asn Pro Gly
180 185 190

Asn Ser Gly Gly Pro Leu Phe Asn Leu Lys Gly Gln Val Val Gly Ile
195 200 205

Asn Ser Gln Ile Tyr Ser Arg Ser Gly Gly Phe Met Gly Ile Ser Phe
210 215 220

Ala Ile Pro Ile Asp Val Ala Met Asn Val Ala Glu Gln Leu Lys Asn
225 230 235 240

Thr Gly Lys Val Gln Arg Gly Gln Leu Gly Val Ile Ile Gln Glu Val
245 250 255

Ser Tyr Gly Leu Ala Gln Ser Phe Gly Leu Asp Lys Ala Gly Gly Ala
260 265 270

Leu Ile Ala Lys Ile Leu Pro Gly Ser Pro Ala Glu Arg Ala Gly Leu
275 280 285

Arg Ala Gly Asp Ile Val Leu Ser Leu Asp Gly Gly Glu Ile Arg Ser
 290 295 300
 Ser Gly Asp Leu Pro Val Met Val Gly Ala Ile Thr Pro Gly Lys Glu
 305 310 315 320
 Val Ser Leu Gly Val Trp Arg Lys Gly Glu Glu Ile Thr Ile Lys Val
 325 330 335
 Lys Leu Gly Asn Ala Ala Glu His Ile Gly Ala Ser Ser Lys Thr Asp
 340 345 350
 Glu Ala Pro Tyr Thr Glu Gln Gln Ser Gly Thr Phe Ser Val Glu Ser
 355 360 365
 Ala Gly Ile Thr Leu Gln Thr His Thr Asp Ser Ser Gly Gly His Leu
 370 375 380
 Val Val Val Arg Val Ser Asp Ala Ala Glu Arg Ala Gly Leu Arg Arg
 385 390 395 400
 Gly Asp Glu Ile Leu Ala Val Gly Gln Val Pro Val Asn Asp Glu Ala
 405 410 415
 Gly Phe Arg Lys Ala Met Asp Lys Ala Gly Lys Asn Val Pro Leu Leu
 420 425 430
 Ile Met Arg Arg Gly Asn Thr Leu Phe Ile Ala Leu Asn Leu Gln
 435 440 445

 <210> 3
 <211> 49
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

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 <210> 4
 <211> 54
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Primer

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 <210> 5
 <211> 6
 <212> PRT
 <213> Neisseria meningitidis

<400> 5
Leu Thr Asn Thr His Val
1 5

<210> 6
<211> 5
<212> PRT
<213> Neisseria meningitidis

<400> 6
Ser Asp Val Ala Leu
1 5

<210> 7
<211> 7
<212> PRT
<213> Neisseria meningitidis

<400> 7
Gly Asn Ser Gly Gly Pro Leu
1 5

<210> 8
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 8
atgctgctgc ccgactttgt ccaagttcaa

30

<210> 9
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 9
gaagcccccaa ccgaaagttca atccggccgtc

30

<210> 10
<211> 1395
<212> DNA
<213> Neisseria meningitidis

<400> 10
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tgcgaaaagg ccggcagctt tttcggtgcg gacaaaaaaag aagcatcctt cgtagaacgc 120
atcgaacaca ccaaagacga cggcagtgctc agtatgctgc tgccccactt tgcccaactg 180
gttcaagcgc aaggccccggc agtcgtcaat attcaggcag ccccccggcc ggcaccccaa 240
aacggcagcgc gcaatggcga aaccgattcc gaccggcttg cgcacagcga cccgttctac 300

gaattttca aacgcctcggtt cccgaacatg cccgaaatcc cccaaagaaga agcagatgac 360
 ggcggattga acttcgggttc gggcttcatc atcagcaaaa acggctacat cctgaccaat 420
 acccacgtcg ttgcccgtat gggcagtatc aaagtccgtc tcaacgacaa gcgcgaatat 480
 accggccaaac tcatcggttc gcatgtccaa tccgatgtcg cccttctgaa aatcgacgca 540
 acggaagagc taccgtcggtt caaaatcggtc aatcccaaaa atttgaaacc gggcgaatgg 600
 gtcgctgcca tcggcgcgcctt gacaacagcg tgaccgcgg catcggtgtcc 660
 gccaaaggca gaagcctgccc caacgaaagc tacacaccct tcattccaaac cgacgttgcc 720
 atcaatccgg gcaattccgg cggcccgctg ttcaacttaa aaggacaggt cgtcggcatc 780
 aattcgcaaa tatacagccg cagcggcgga ttcatggca ttcattttgc catcccgatt 840
 gacgttgcca tgaatgtcgc cgaacagctg aaaaacacccg gcaaaagtcca acgcggacaa 900
 ctggcggtga ttattcagga agtattctac gtttggcac agtcgttcgg tctggataaa 960
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 cccgtcatgg tcggcgccat tacgcccggaa aagaagtcg gcctcggcgt atggcgcaaa 1140
 ggcgaagaaa tcacaatcaa agccaagctg ggcaacgcgc ccgagcatac cggcgcatca 1200
 tccaaaacag atgaagcccc ctacaccgaa cagcaatccg gtacgttctc ggtcgaatcc 1260
 gcaggcatta cccttcagac acataccgac agcagcggca aacacctcg cgtcgtacgg 1320
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 gcaagtcccc gtcaa 1395

<210> 11

<211> 498

<212> PRT

<213> Neisseria meningitidis

<400> 11

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Ser Leu Ala Gly Cys Asp Lys Ala Gly Ser Phe Phe Gly Ala Asp Lys
 20 25 30

Lys Glu Ala Ser Phe Val Glu Arg Ile Lys His Thr Lys Asp Asp Gly
 35 40 45

Ser Val Ser Met Leu Leu Pro Asp Phe Val Gln Leu Val Gln Ser Glu
 50 55 60

Gly Pro Ala Val Val Asn Ile Gln Ala Ala Pro Ala Pro Arg Thr Gln
 65 70 75 80

Asn Gly Ser Ser Asn Ala Glu Thr Asp Ser Asp Pro Leu Ala Asp Ser
 85 90 95

Asp Pro Phe Tyr Glu Phe Phe Lys Arg Leu Val Pro Asn Met Pro Glu
 100 105 110

Ile Pro Gln Glu Glu Ala Asp Asp Gly Gly Leu Asn Phe Gly Ser Gly
 115 120 125

Phe Ile Ile Ser Lys Asp Gly Tyr Ile Leu Thr Asn Thr His Val Val
 130 135 140

Thr Gly Met Gly Ser Ile Lys Val Leu Leu Asn Asp Lys Arg Glu Tyr
 145 150 155 160

Thr Ala Lys Leu Ile Gly Ser Asp Val Gln Ser Asp Val Ala Leu Leu
 165 170 175

Lys Ile Asp Ala Thr Glu Glu Leu Pro Val Val Lys Ile Gly Asn Pro
180 185 190

Lys Asp Leu Lys Pro Gly Glu Trp Val Ala Ala Ile Gly Ala Pro Phe
195 200 205

Gly Phe Asp Asn Ser Val Thr Ala Gly Val Ser Ala Lys Gly Arg Ser
210 215 220

Leu Pro Asn Glu Ser Tyr Thr Pro Phe Ile Gln Thr Asp Val Ala Ile
225 230 235 240

Asn Pro Gly Asn Ser Gly Gly Pro Leu Phe Asn Leu Lys Gly Gln Val
245 250 255

Val Gly Ile Asn Ser Gln Ile Tyr Ser Arg Ser Gly Gly Phe Met Gly
260 265 270

Ile Ser Phe Ala Ile Pro Ile Asp Val Ala Met Asn Val Ala Glu Gln
275 280 285

Leu Lys Asn Thr Gly Lys Val Gln Arg Gly Gln Leu Gly Val Ile Ile
290 295 300

Gln Glu Val Ser Tyr Gly Leu Ala Gln Ser Phe Gly Leu Asp Lys Ala
305 310 315 320

Gly Gly Ala Leu Ile Ala Lys Ile Leu Pro Gly Ser Pro Ala Glu Arg
325 330 335

Ala Gly Leu Arg Ala Gly Asp Ile Val Leu Ser Leu Asp Gly Gly Glu
340 345 350

Ile Arg Ser Ser Gly Asp Leu Pro Val Met Val Gly Ala Ile Thr Pro
355 360 365

Gly Lys Glu Val Ser Leu Gly Val Trp Arg Lys Gly Glu Glu Ile Thr
370 375 380

Ile Lys Val Lys Leu Gly Asn Ala Ala Glu His Ile Gly Ala Ser Ser
385 390 395 400

Lys Thr Asp Glu Ala Pro Tyr Thr Glu Gln Gln Ser Gly Thr Phe Ser
405 410 415

Val Glu Ser Ala Gly Ile Thr Leu Gln Thr His Thr Asp Ser Ser Gly
420 425 430

Gly His Leu Val Val Val Arg Val Ser Asp Ala Ala Glu Arg Ala Gly
435 440 445

Leu Arg Arg Gly Asp Glu Ile Leu Ala Val Gly Gln Val Pro Val Asn
450 455 460

Asp Glu Ala Gly Phe Arg Lys Ala Met Asp Lys Ala Gly Lys Asn Val
465 470 475 480

Pro Leu Leu Ile Met Arg Arg Gly Asn Thr Leu Phe Ile Ala Leu Asn
485 490 495

Leu Gln

<210> 12
<211> 475

<212> PRT

<213> Neisseria meningitidis

<400> 12

Ala Gly Ser Phe Phe Gly Ala Asp Lys Lys Glu Ala Ser Phe Val Glu
1 5 10 15

Arg Ile Lys His Thr Lys Asp Asp Gly Ser Val Ser Met Leu Leu Pro
20 25 30

Asp Phe Val Gln Leu Val Gln Ser Glu Gly Pro Ala Val Val Asn Ile
35 40 45

Gln Ala Ala Pro Ala Pro Arg Thr Gln Asn Gly Ser Ser Asn Ala Glu
50 55 60

Thr Asp Ser Asp Pro Leu Ala Asp Ser Asp Pro Phe Tyr Glu Phe Phe
65 70 75 80

Lys Arg Leu Val Pro Asn Met Pro Glu Ile Pro Gln Glu Glu Ala Asp
85 90 95

Asp Gly Gly Leu Asn Phe Gly Ser Gly Phe Ile Ile Ser Lys Asp Gly
100 105 110

Tyr Ile Leu Thr Asn Thr His Val Val Thr Gly Met Gly Ser Ile Lys
115 120 125

Val Leu Leu Asn Asp Lys Arg Glu Tyr Thr Ala Lys Leu Ile Gly Ser
130 135 140

Asp Val Gln Ser Asp Val Ala Leu Lys Ile Asp Ala Thr Glu Glu
145 150 155 160

Leu Pro Val Val Lys Ile Gly Asn Pro Lys Asp Leu Lys Pro Gly Glu
165 170 175

Trp Val Ala Ala Ile Gly Ala Pro Phe Gly Phe Asp Asn Ser Val Thr
180 185 190

Ala Gly Val Ser Ala Lys Gly Arg Ser Leu Pro Asn Glu Ser Tyr Thr
195 200 205

Pro Phe Ile Gln Thr Asp Val Ala Ile Asn Pro Gly Asn Ser Gly Gly
210 215 220

Pro Leu Phe Asn Leu Lys Gly Gln Val Val Gly Ile Asn Ser Gln Ile
225 230 235 240

Tyr Ser Arg Ser Gly Gly Phe Met Gly Ile Ser Phe Ala Ile Pro Ile
245 250 255

Asp Val Ala Met Asn Val Ala Glu Gln Leu Lys Asn Thr Gly Lys Val
260 265 270

Gln Arg Gly Gln Leu Gly Val Ile Ile Gln Glu Val Ser Tyr Gly Leu
275 280 285

Ala Gln Ser Phe Gly Leu Asp Lys Ala Gly Gly Ala Leu Ile Ala Lys
290 295 300

Ile Leu Pro Gly Ser Pro Ala Glu Arg Ala Gly Leu Arg Ala Gly Asp
305 310 315 320

Ile Val Leu Ser Leu Asp Gly Gly Glu Ile Arg Ser Ser Gly Asp Leu
325 330 335

Pro Val Met Val Gly Ala Ile Thr Pro Gly Lys Glu Val Ser Leu Gly
340 345 350

Val Trp Arg Lys Gly Glu Glu Ile Thr Ile Lys Val Lys Leu Gly Asn
355 360 365

Ala Ala Glu His Ile Gly Ala Ser Ser Lys Thr Asp Glu Ala Pro Tyr
370 375 380

Thr Glu Gln Gln Ser Gly Thr Phe Ser Val Glu Ser Ala Gly Ile Thr
385 390 395 400

Leu Gln Thr His Thr Asp Ser Ser Gly Gly His Leu Val Val Val Arg
405 410 415

Val Ser Asp Ala Ala Glu Arg Ala Gly Leu Arg Arg Gly Asp Glu Ile
420 425 430

Leu Ala Val Gly Gln Val Pro Val Asn Asp Glu Ala Gly Phe Arg Lys
435 440 445

Ala Met Asp Lys Ala Gly Lys Asn Val Pro Leu Leu Ile Met Arg Arg
450 455 460

Gly Asn Thr Leu Phe Ile Ala Leu Asn Leu Gln
465 470 475

<210> 13

<211> 1326

<212> DNA

<213> Neisseria meningitidis

<400> 13

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gaaggcccgg cagtctgtcaa tattcaggca gcccccgccc cgccgcaccca aaacggcagc 180
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aaacgcctcg tccccaaatc gcccgaatc ccccaagaag aagcagatga cggcggattg 300
aacttcgggtt cgggcttcat catcagcaaa aacggctaca tcctgaccaa taccacgtc 360

gttgcggta tggcagttt caaagtccgtt ctcaacgaca agcgcgaata taccgc 420
ctcatcggtt cggatgtcca atccgatgtc gcccctctga aaatcgacgc aacggaagag 480
ctaccgcgtcg tcaaaatcggtt caatccaaa aatttgaac cggcgaatg ggtcgctgcc 540
atcggcgcgc ccttcggctt tgacaacagc gtgaccgccc gcacatgttc cgccaaaggc 600
agaagcctgc ccaacgaaag ctacacaccc ttcatccaaa ccgacgttgc catcaatccg 660
ggcaattccg gcggcccgct gttcaactt aaaggacagg tcgtcggcat caattcgcaa 720
atatacagcc gcagcggcgg attcatggc atctccttg ccatcccgat tgacgttgcc 780
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gcattgattt ccaaaatcct tcccggcagc cccgcagaac gtgcggcct gcaggcggc 960
gacatcggtt tcagcctcga cggcggagaa atacgttctt ccggcgcacct tcccgtcatg 1020
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atcacaatca aagccaagct gggcaacgccc gccgagcata ccggcgcacatc atccaaaaca 1140
gatgaagcccc cctacaccga acagcaatcc ggtacgttct cggtcgaatc cgcaggcatt 1200
acccttcaga cacataccga cagcagcggc aaacacctcg tcgtcgtacg ggtttccgac 1260
gcccccaac gcgcaggctt aaggcacggc gacgaaatcc tagccgttag ggcaagtccc 1320
cgtcaa 1326

<210> 14

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 14

attacgcaga ggaccatggc cggcagcttt ttcgggtgcgg ac

42

<210> 15

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 15

attacgcaga ggttcttagac cttgcagggtt taatgcgata aacagcg

47

<210> 16

<211> 51

<212> PRT

<213> Neisseria meningitidis

<400> 16

Val Phe Lys Lys Tyr Gln Tyr Leu Ala Leu Ala Ala Leu Cys Ala Ala
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Ser Leu Ala Gly Cys Asp Lys Ala Gly Ser Phe Phe Gly Ala Asp Lys
20 25 30

Lys Glu Ala Ser Phe Val Glu Arg Ile Lys His Thr Lys Asp Asp Gly
35 40 45

Ser Val Ser

50

<210> 17
<211> 153
<212> DNA
<213> *Neisseria meningitidis*

<400> 17
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tgcgacaaag ccggcagctt tttcggtgcg gacaaaaaaag aagcatcctt tgtagaacgc 120
atcaaacaca ccaaagacga cggcagcgtc agt 153

<210> 18
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 18
gtgttcaaaa aataccaata cctc 24

<210> 19
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 19
actgacgctg ccgtcgtctt tggt 24

<210> 20
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 20
ttgcagggtt aatgcgataa acagcgt 27